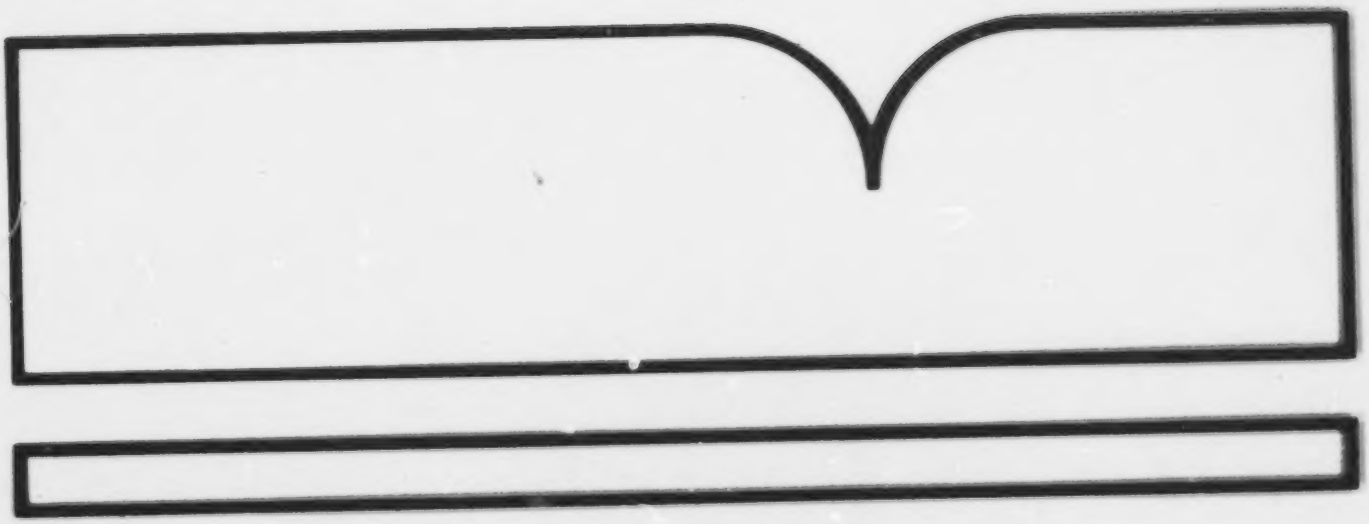
PB89-182448

Superfund Record of Decision (EPA Region 6): Curley Pit Site, Groundwater Operable Unit, Crittenden County Arkansas (Second Remedial Action), September 1988

(U.S.) Environmental Protection Agency
Washington, DC

26 Sep 88



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National Technical Information Service
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Office of
Emergency and
Remedial Response

EPA-ROD-R06-88/046
September 1988

PB89-182448

EPA

Superfund Record of Decision:

Gurley Pit, AR

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16. Abstract (Limit: 200 words)

The Gurley Pit site consists of a 3.25-acre pit located approximately one mile north of Edmondson, Crittenden County, Arkansas. The site lies within the 100-year flood plain of Fifteen Mile Bayou, which discharges to the Mississippi River. Land in the vicinity of the site is sparsely populated with five residences located within a 0.5 mile radius. The primary land use is agricultural. Gurley Refining Company (GRC) leased the site from R.A. Caldwell between 1970 and 1980. During this time the pit was divided by levees into three cells and used between 1970 and 1975 as a state permitted disposal site for secondary oil refining wastes including acids, oil sludges, PCBs, inorganics and spent diatomaceous wastes. In March 1975, citizen complaints regarding discharges from the pit led to investigations by the Arkansas Department of Pollution Control and Ecology (ADPCE), which discovered permit and State environmental statute violations by GRC. GRC abandoned the site in 1976. In May 1978, EPA and ADPCE received complaints of chronic overflows from storm runoff. These overflows had an adverse affect on fish and waterfowl in the Fifteen Mile Bayou. Subsequently, EPA conducted separate spill cleanup operations in July 1978 and April 1979. EPA completed an Enforcement Decision Document (EDD) in October 1986, which addressed the source control operable unit consisting of the waste in the pits and the surface contamination. The

(See Attached Sheet)

17. Document Analysis a. Descriptors
Record of Decision
Gurely Pit, AR
Second Remedial Action - Final
Contaminated Media: not applicable
Key Contaminants: not applicable

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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16. ABSTRACT (continued)

selected source control remedy included treatment and discharge of onsite surface water, offsite incineration of PCB-contaminated oil, ground water monitoring, and stabilization and onsite disposal of contaminated sludge, sediment, and soil. This ROD addresses the ground water operable unit. Investigations have determined that contaminants from the pit have not migrated through the subsurface into the ground water. Elevated levels of inorganics (specifically arsenic and manganese) were detected but were consistent with background levels. No site-related contaminants were identified in the ground water.

The selected remedial action for this site is no further action beyond that already specified in the source control operable unit EDD. The ground water will be monitored for at least thirty years to ensure that no migration of the contaminants occurs. There are no Federal capital or O&M costs associated with this remedial action.

DECLARATION OF THE RECORD OF DECISION

SITE NAME AND LOCATION

Gurley Pit site, Crittenden County, Arkansas. Groundwater Operable Unit.

STATEMENT OF PURPOSE

This decision document describes the remedial decision for the Groundwater Operable Unit of this site. This decision was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the National Contingency Plan (40 CFR Part 300).

STATEMENT OF BASIS

This decision is based upon the administrative record for the Gurley Oil Pit Superfund site. An attached index (Appendix C) identifies the items which comprise the administrative record upon which the selection of this remedial approach is based.

DESCRIPTION OF REMEDY

The Environmental Protection Agency has decided that no additional action above that specified in the October 6, 1986, Enforcement Decision Document on the Source Control Operable Unit is necessary. Activities recommended, but which are already part of the source control design include the following:

o Installation of a groundwater monitoring system.

o Monitoring the site for a minimum of 30 years following completion of the source control remedy.

DECLARATION

This decision is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Contingency Plan. It, in light of the previously approved Source Control Remedial Action, is protective of human health and the environment and attains Federal and State requirements that are applicable or relevant and appropriate.

The Arkansas Department of Pollution Control and Ecology has been consulted throughout the remedial investigation activities and concurs with this decision for the Groundwater Operable Unit (Appendix D). The above described action will be conducted in conjunction with the remedial activities specified in the October 6, 1986, Enforcement Decision Document for the Source Control Operable Unit.

Robert E. Layton Jr. — Sept. 26, 1988

Robert E. Layton Jr., P.E.
Regional Administrator

Date

iii

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

GURLEY PIT SITE

GROUNDWATER OPERABLE UNIT

EDMONDSON, CRITTENDEN COUNTY, ARKANSAS

SEPTEMBER 1988

TABLE OF CONTENTS

	PAGE
I. SITE DESCRIPTION	
Site Location	1
Site History	1
II. REMEDIAL INVESTIGATION RESULTS	
Hydrogeologic Setting	2
Nature and Extent of Contamination	3
Potential Risks to Human Health and the Environment	5
III. ENFORCEMENT	6
IV. COMMUNITY RELATIONS HISTORY	6
V. SELECTED REMEDIAL APPROACH	
Rationale	6
Consistency with the National Contingency Plan and Superfund Statutes	7
Operation and Maintenance	8
Future Actions	8
VI. APPENDICES	
A. Table 1	
B. Table 2	
C. Administrative Record Index	
D. Letter Regarding States Verbal Support of the Proposed Record of Decision	

EXECUTIVE SUMMARY

The Gurley Pit Superfund site is located near Edmondson, Arkansas. From 1970 until 1975, the Gurley Refining Company used the site for disposal of secondary oil refining wastes (including PCBs, lead and zinc). Chronic spills occurred from the pit site when accumulations of storm runoff exceeded the storage capacity. In 1978, EPA became involved in the investigation of the site and assumed the lead agency role. A source control Remedial Investigation/Feasibility Study (RI/FS) was completed by EPA in April of 1986. The pre-SARA, Source Control Enforcement Decision Document (October 6, 1986) dealt with the waste in the pits and the surface contamination at the site. The selected source control remedy includes incineration of contaminated oil, treatment and discharge of surface water, and stabilization and disposal of contaminated soil and sludges on-site. This Record of Decision will address the potential groundwater contamination.

Following the source control operable unit, EPA initiated a two-phased groundwater operable unit RI. The results of the Phase I sampling showed elevated levels of inorganics (specifically arsenic and manganese), but no organic contaminants were attributed to the pit waste. The results of the Phase I sampling were inconclusive with regard to background water quality.

Water quality data obtained in the Phase I-I investigation led to the conclusion that contaminants from the pit have not migrated through the subsurface into the groundwater. The results of the baseline public health assessment related to the groundwater operable unit showed that the identified health risks were associated with the background water quality conditions. Background arsenic levels in the shallow alluvial aquifers resulted in a lifetime cancer risk of 9×10^{-4}. Water from these aquifers is used primarily for irrigation. Following a comprehensive review of the data, EPA made the decision not to conduct a feasibility study since no groundwater contamination was present.

EPA's proposed remedial approach is No Further Action beyond that already specified in the Source Control Operable Unit Enforcement Decision Document. As part of the Source Control activities, the site will be monitored for a period of at least thirty years to ensure that no migration of the contaminants occurs.

Summary of Remedial Alternative Selection
Groundwater Operable Unit
Gurley Pit Site
Crittenden County, Arkansas
September 1988

I. SITE DESCRIPTION

Site Location

The Gurley Pit site is located at the northwest corner of the intersection of County Roads 175 and 14, approximately 1.2 miles north of Edmondson, Crittenden County, Arkansas (Figure 1). The site, consists of a pit divided by levees into three cells. It occupies 3.25 acres in the 100-year floodplain of Fifteen Mile Bayou. Fifteen Mile Bayou is a tributary of the St. Francis River, which is a tributary of the Mississippi River.

The lands in the vicinity of the site are sparsely populated and the primary land use is agricultural. Five residences are located within a 0.5 mile radius of the site. The nearest community to the site is Edmondson, Arkansas, located about 1.2 miles to the south, with a population of 412. In 1980, the total population of Crittenden County was estimated to be 49,097.

Site History

The pit was excavated sometime prior to 1970, when the Arkalite Company removed the soils for use in aggregate production. Mr. W.A. Caldwell, the current owner of the site property, leased the site to the Gurley Refining Company from July 14, 1970, to July 13, 1980. The Gurley Refining Company leased the pit area for use as a disposal site for secondary oil refining wastes.

A waste disposal permit was granted by the Arkansas Department of Pollution Control and Ecology (ADPCE) on September 25, 1970. Use of the pit for disposal of secondary oil refining wastes, including acid oil sludges and spent diatomaceous filter materials, continued until 1975. In March 1975, ADPCE received citizen complaints regarding discharges from the pit. The subsequent investigation and trial resulted in the conviction of the Gurley Refining Company on charges of violation of its waste disposal permit and violation of the Arkansas Water and Air Pollution Control Act. Sentence was suspended for a period of one year to enable the Gurley Refining Company to develop a plan for site cleanup. In October 1975, the Gurley Refining Company shut down the part of their refining operation that generated the wastes disposed of at the site.

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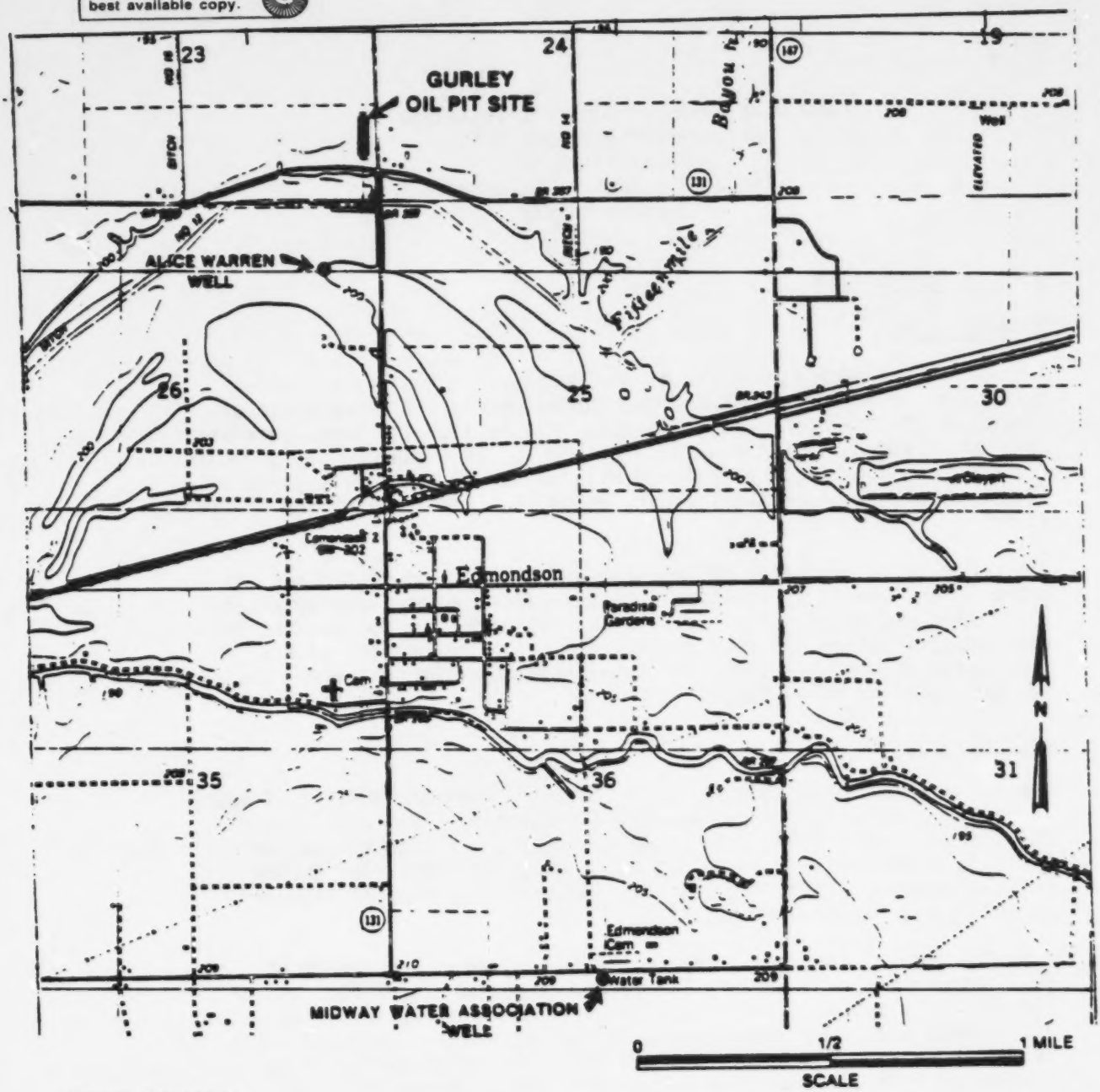

Source Edmondson
U.S.G.S. 7.5 Minute Topographic Quadrangle

FIGURE 1
LOCATION MAP
GURLEY OIL PIT SITE

After Gurley Refining Company abandoned the site in 1976, EPA and ADPCE received complaints of chronic overflows occurring at the site. These overflows, which were reported in May 1978, had an adverse affect on fish and waterfowl in Fifteen Mile Bayou. In July 1978, and then again in April 1979, EPA conducted spill cleanup operations under Section 311 of the Clean Water Act.

ADPCE conducted a program of regular site inspections after the 1979 spill and in August 1981, indicated that conditions at the site were essentially unchanged. In 1983, the site was evaluated using the Hazard Ranking System and subsequently listed on the National Priorities List.

EPA completed a remedial investigation/feasibility study (RI/FS) on the source control operable unit in April 1986. The source control operable unit RI/FS investigated characteristics of the waste contained in the pits and the contaminated soil and water and evaluated possible remedial alternatives. EPA's October 1986, Enforcement Decision Document (pre-SARA) dealing with the source selected a remedy consisting of the following:

- o treatment and discharge of onsite surface water,
- o removal and off-site incineration of PCB contaminated oil,
- o stabilization and disposal of contaminated sludge, sediment, and soil onsite.
- o groundwater monitoring for a period of at least thirty years.

Based on the limited amount of groundwater data developed during the source control operable unit, EPA decided to conduct a separate, more comprehensive, groundwater study. The groundwater study was conducted from April 1987, to July 1988.

II. REMEDIAL INVESTIGATION RESULTS

Hydrogeologic Setting

There are three major aquifers in Crittenden County: the deep "1,400-foot sand" of the Wilcox Group, which supplies all municipal wells in the county; in intermediate "500-foot sand" of the Clairborne Group, which is comparatively undeveloped; and the shallow alluvial Quaternary deposits, which supplies the majority of the domestic wells in the county. A generalized cross-section of the geology under the site is illustrated in Figure 2. The Wilcox Group is about 300 feet thick and consists of silts and sands. Overlying the Wilcox Group is the 900- to 1000-foot thick Clairborne Group made up of a series of interbedded sands and lignitic clays. Quaternary age alluvial deposits overlie the Clairborne Group. These surficial, alluvial deposits extend to a depth of about 200 feet and consist of a basal graveliferous unit and an upper non-graveliferous unit. The basal gravel ranges in depth from about 90 to 200 feet and is the principal aquifer used for irrigation in the area. These alluvial deposits grade irregularly upward from coarse sand and gravel at the base to progressively finer sands, silt, and clay. Due to the naturally occurring poor water quality, most domestic wells in the upper alluvial deposits are used solely for irrigation purposes.

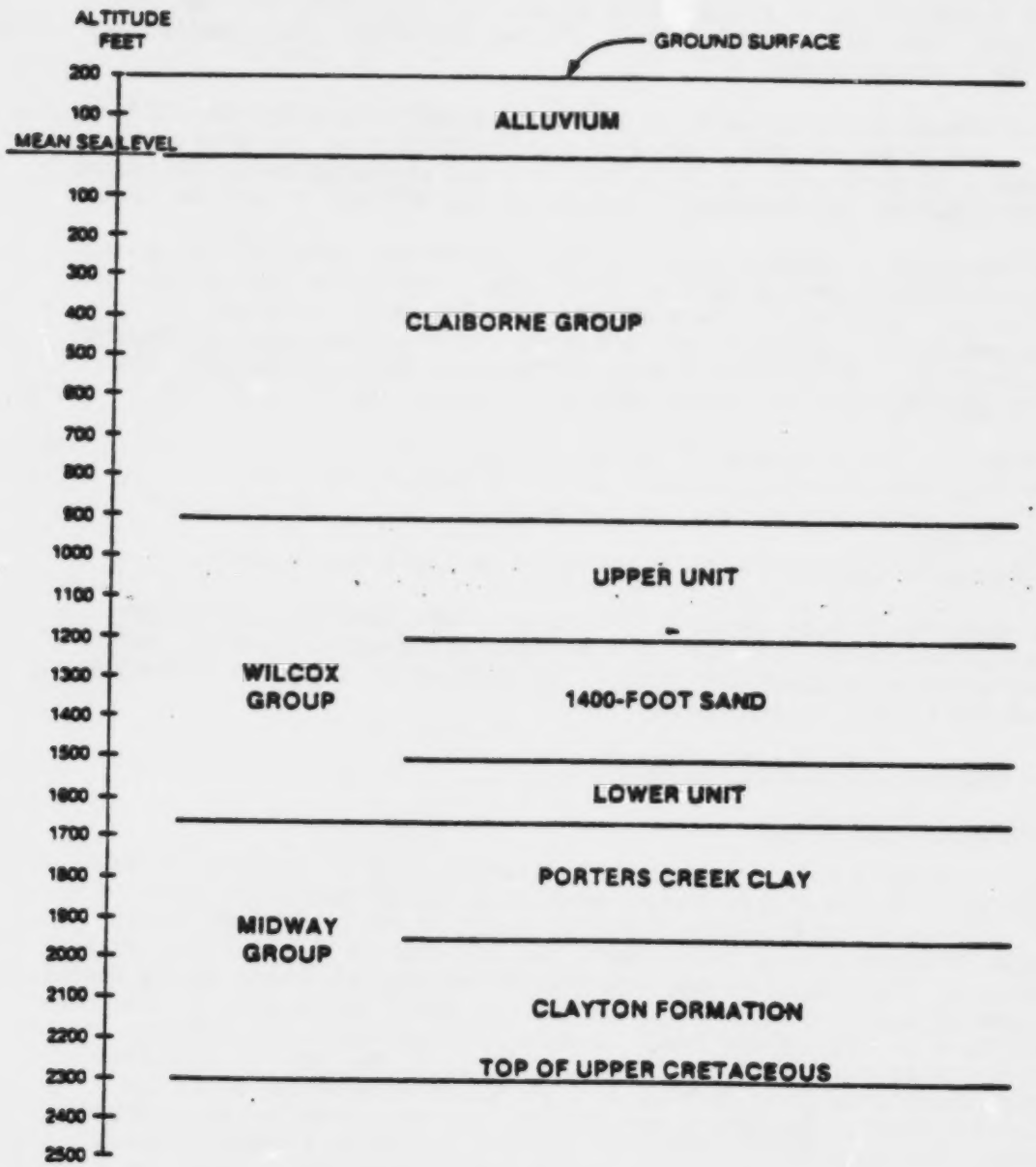

FIGURE 2
GENERALIZED GEOLOGIC SECTION
GURLEY OIL PITS

Water from the Quaternary alluvial deposits has high concentrations of iron and other dissolved metals.

Regionally, groundwater flow is to the southwest. Some variation in flow from the southwest to the southeast is found near stream boundaries, depending on stream stage.

Primary groundwater use within 2 miles of the site is for irrigation. Drinking water supplies are provided by the Midway Water Association. A 1,585-foot deep well completed in the Wilcox "1,400-foot sand" provides the Midway Water Association with its water. This well is located approximately 2.2 miles southeast of the site. The nearest residential well is located 0.4 miles south of the site, on the south side of Fifteen Mile Bayou. This well is used for irrigation.

Nature and Extent of Contamination

In 1984, three deep (50-foot) and five shallow (25-foot) wells were installed along the pit boundaries in the upper portion of the alluvial deposits (Figure 3). Water level measurements in the deeper alluvial sand deposits showed an indistinguishable gradient or flat piezometric surface. Water level measurements did, however, indicate that the deep and shallow wells were completed in two separate water bearing zones. The two zones are separated by low permeability clays that range from 24 to 42 feet in thickness and overlie the deeper alluvial aquifer.

The limited groundwater sampling that took place before the source control decision showed that maximum concentration levels (MCLs) for some metals in the groundwater were exceeded. However, data from this sampling could not adequately define background groundwater quality near the site, nor adequately determine if a plume of contamination was present at the site. Therefore, a conclusion as to whether or not pit wastes were contaminating the groundwater could not be made.

Following the source control study, EPA initiated a two-phased groundwater study. The purpose of the first phase was to resample the onsite wells and to research available groundwater data. The purpose of the second phase was to install additional off-site wells and to further define background groundwater quality for the upper two alluvial water bearing zones.

Phase I Results

During the first phase of the groundwater operable unit, the eight wells installed during the source control operable unit activities were resampled. Also sampled during Phase I was a private well, located 0.4 miles south of the site. Use of this well, as a reliable background well, was later ruled out due to the unknown construction methods used during installation and its location outside the extent of the shallow alluvial aquifers. Table 1 lists, for all wells sampled, contaminants that approach or exceed Safe Drinking Water Act and/or Clean Water Act

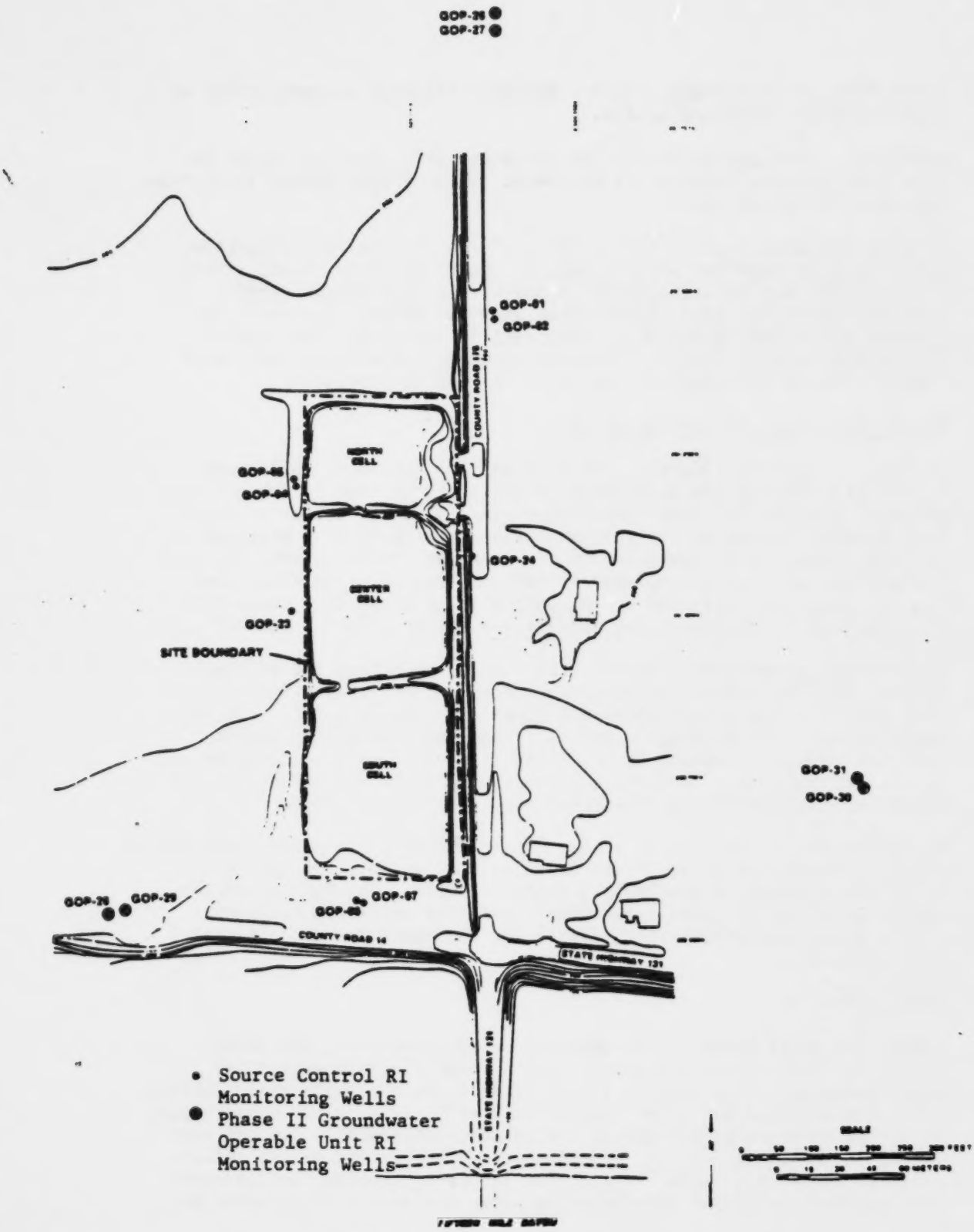

FIGURE 3
MONITORING WELL LOCATIONS

criteria. A comprehensive summary of all groundwater data developed during both Phase I and Phase II can be found in Appendix A of the Gurley Oil Pit Groundwater Operable Unit RI report (August 1, 1988).

Groundwater data was then compared to maximum contaminant level (MCL) criteria and Ambient Water Quality Criteria (AWQC). MCLs are criteria which establish the maximum permissible level of contaminants in a drinking water supply. AWQC are numerical guidelines from which to determine whether a surface water quality problem exists. AWQC are used for comparative purposes when no other water quality criteria exists. From the Phase I samples, the maximum concentration for total (unfiltered) arsenic in one deep well exceeded the MCL. All of the samples analyzed, including the sample from the off-site well located 0.4 miles to the south, contained iron and manganese in concentrations exceeding their secondary MCLs. Two samples also contained total nickel concentrations above the Ambient Water Quality Criteria (AWQC). The organic analyses indicated that no MCLs or AWQC were exceeded in either the shallow or deep groundwater system. The high metals concentrations found in the groundwater were thought to be attributable to the background water quality for the area. In order to more accurately define background groundwater quality near the site, the decision was made to install additional off-site wells during the Phase II activities.

Phase II Results

Since existing site wells covered only a limited area, the background water quality and the direction of groundwater flow could not be accurately defined during the Phase I activities. To further define these parameters, EPA developed a limited groundwater monitoring well expansion program. Six monitoring wells were installed during the Phase II investigation (Figure 3).

Samples collected during well installation provided information on the geology beneath the site. The first 30 feet or so of soils beneath the Gurley Oil Pit site is very uniform. The clays underlying the site range in depth from 24 to 42 feet. This clay layer has evidently served to impede contaminant migration and contain the waste within the pit boundaries. Permeability of the clay layer ranges from 10^{-5} to 10^{-7} centimeters per second. Water production from the shallow wells was minimal due to the low permeability and limited extent of the water bearing lenses. Beneath the upper clay layer are fine to medium grain sands of the lower alluvial aquifer.

Groundwater samples were collected for organic and inorganic analysis from each of the site monitoring wells. A summary of the inorganic analysis of the groundwater is presented in Table 2. The concentrations of inorganic chemical constituents were affected by the presence of sediments in most of the samples. For this reason, dissolved (filtered) metals samples were used to provide a reliable indication of the actual groundwater quality. The results of the dissolved metals analysis indicated that arsenic, iron, and manganese all exceeded maximum contaminant level (MCL) requirements set forth by the Safe Drinking Water Act. However, the presence of arsenic, iron, and manganese

is not attributable to the pit contaminants. These metals were also detected in the background wells installed during the Phase II activities and exist in the water of the shallow alluvial deposits at elevated concentrations. The source of the arsenic in this area is not known, but may be due to the historic agricultural use of arsenic-based herbicides, pesticides and insecticides.

Acetone and methylene chloride were the only organics identified above detection limits. These compounds are not considered to be site related. Acetone and methylene chloride are typical laboratory contaminants and this was confirmed by their presence in the blank samples. No other pesticides, PCBs, semivolatiles (BNAs), or volatile organics were identified above the sample detection limits.

The lack of organic constituents identified in the groundwater indicates that there is no correlation between the pit contaminants and the groundwater water quality. The lack of organics in all of the wells indicates that pit contaminants have not migrated from the site. If leakage from the pit had occurred, mobile organic oil refinery wastes would have been detected in the monitoring well samples.

After conducting a thorough review of the Phase I and II data, EPA made the decision not to conduct a feasibility study on the Groundwater Operable Unit. EPA's decision not to conduct a feasibility study is supported by the fact that no site-attributed contaminants were identified in the groundwater and, therefore, it was not necessary to develop and evaluate various remedial alternatives.

Potential Impacts of the Site on Human Health and the Environment

Although no site-related contaminants were identified in the groundwater, potential future health risks do exist from the ingestion of shallow groundwater at the site. These health risks are due to the poor background groundwater quality in the vicinity of the site. The appropriate Federal and State authorities have been notified of the health risks associated with the groundwater.

It is important to note that there is not, however, an immediate health risk. The primary use of water from the shallow alluvial deposits is for irrigation. Drinking water supplies are provided by the Midway Water Association. The Midway Water Association obtains its water from a 1,585-foot deep well located 2.2 miles southeast of the site. Water from the Midway Water Association was tested during the source control remedial investigation and was found not to exceed any health based criteria.

The contaminants of primary concern in the background water at the site are manganese and arsenic. A risk assessment was conducted to evaluate the health risks associated with the high concentrations of inorganics found in the groundwater. The results of the analysis showed an excess lifetime cancer risk of 9×10^{-4} from exposure to arsenic in the deep

(50 foot) background well. No organic compounds were found to exceed water quality criteria in any of the groundwater samples analyzed.

III. ENFORCEMENT HISTORY

On April 15, 1983, EPA sent notice letters to R.A. Caldwell, the property owner, and to Larry Gurley of Gurley Refining Company, Inc. and Gurley Refining Company for a commitment to conduct the RI/FS. On July 19, 1983, letters were sent to the parties setting a final deadline of July 29, 1983, for receipt of a commitment from the parties to conduct the RI/FS. When no commitment was received, EPA informed the parties by letter, dated September 1, 1983, of EPA's decision to do the RI/FS. Following completion of the Source Control Operable Unit RI/FS, notice letters were sent to Mr. Caldwell and to Gurley Refining Company, Inc. on May 7, 1986, asking if they would voluntarily perform the necessary remedial work. A second set of notice letters were sent in July 1986, requesting a specific affirmation or refusal to conduct the work. The parties failed to respond within the specified time. A complaint has been filed in District Court, Civil Action No. J-C-87-291 in the Eastern District of Arkansas, for recovery of costs incurred by EPA during conduct of the RI/FS. The case is in pre-trial status.

IV. COMMUNITY RELATIONS HISTORY

Community concern beyond the residents in the immediate site area is very low. During the previous comment period on source control, nearby residents and the Mayor of Edmondson expressed a desire for action to clean-up the source of the contamination.

On August 1, 1988, EPA issued a press release and the Proposed Plan fact sheet. The press release was mailed to all news organizations in the northeast Arkansas/Memphis, Tennessee area, while the fact sheet was mailed to interested citizens and elected officials. Extra copies of the fact sheet were provided to the three local repositories for display purposes.

Both the press release and the fact sheet announced the comment period from August 8 through September 8, 1988. Also, the community was given an opportunity for a public meeting to discuss the proposed plan.

There were no requests for a public meeting and no comments or questions during the comment period. Since no comments or questions were received, the Responsiveness Summary to this document has been omitted.

V. SELECTED REMEDIAL APPROACH: No Further Action

Rationale

As mandated by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA, 1986) and in accordance with the National

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Contingency Plan (NCP) several statutory requirement must be met for selecting the appropriate remedial approach for a Superfund site:

o Overall Protection of Human Health and the Environment
o Consistency with Other Environmental Laws
o Cost Effectiveness

Based on the findings of the remedial investigation and the Public Health Evaluation, EPA concludes that no active remediation of the groundwater beyond the remedy for the source of contamination is warranted or necessary. Activities which are recommended and are already part of the source control design include installation of a groundwater monitoring system and monitoring the site for a period of at least thirty years. Groundwater monitoring will be conducted as part of the source control activities and will be carried out in compliance with 40 CFR Part 264.117(a), which requires thirty years of monitoring after closure of a hazardous waste disposal facility. If however, unanticipated contaminant migration is detected during the monitoring period, appropriate remedial measures will be taken.

As detailed in the remedial investigation, no site related contamination was identified in the groundwater. This, along with the finding of the Health Evaluation that no health risks are attributable to the site, supports the decision not to conduct any remediation of the groundwater. Furthermore, implementation of the source control remedial action will prevent any future contaminant migration. The source control remedial action will protect the groundwater and human health through removal of the source.

For those contaminants of concern which are not attributed to the Gurley Pit site, an excess lifetime cancer risk of 9×10^{-4} has been estimated. This cancer risk assumes that water from the shallow alluvial aquifers will be used as a potable water supply sometime in the future. This information is being reviewed by the appropriate Federal and State authorities. The Agency for Toxic Substances Disease Registry has been notified of the analytical data results.

Consistency with the National Contingency Plan and the Provisions of the Superfund Amendments and Reauthorization Act

This decision, in conjunction with the remedial action approved in the October 1986 Source Control Enforcement Decision Document, provides for protection of public health, welfare, and the environment. In addition, this decision is consistent with the National Contingency Plan (NCP), 40 CFR 300.68(d) which requires the lead agency to gather sufficient information to determine the necessity for and proposed extent of remedial action. Development of remedial alternatives was not warranted in this situation on the following basis:

o Site related contamination was not detected in the groundwater and thus, no site attributable risk to human health and the environment pertains to the groundwater.

- o Current site related groundwater concentrations do not exceed any Federal or State standards. The no further action remedial approach is, therefore, consistent will applicable environmental laws.

- o The expenditure of additional funds to implement a groundwater remedy at the Gurley Pit site would not result in any additional protection of human health and the environment. Therefore, the decision not to conduct any further action is considered cost effective.

Operation and Maintenance

Future operation and maintenance will center around monitoring the effectiveness of the remedial activities specified in the October 1986, Source Control Enforcement Decision Document.

The operation and maintenance of the site will be the responsibility of the Arkansas Department of Pollution Control and Ecology (ADPCE). EPA will fund the first year of operation and maintenance, after which time ADPCE will take full responsibility.

Future Actions

No future remedial actions, beyond those activities approved in the Source Control Enforcement Decision Document, are anticipated.

SARA Section 121(c) states; "If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less than each 5 years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented."

Five year reviews will be required at this site since the source control activities will dispose of the waste onsite.

Schedule

Approve Remedial Approach (sign ROD)	September 1988
* * *	
Complete Source Control Remedial Design	September 1988
Start Source Control Remedial Action (Groundwater monitoring system installed as part of these activities)	March 1989*
Complete Source Control Remedial Action (Begin 30 years of monitoring)	November 1990

* This assumes timely State match

APPENDIX A

Table 1
PHASE 1 SAMPLING
SUMMARY OF SELECTED CONTAMINANTS FOR SOURCE CONTROL RI WELLS

Well	Contaminants of Concern						
	Arsenic µg/l	Cadmium µg/l	Chromium µg/l	Iron µg/l	Lead µg/l	Manganese µg/l	Nickel µg/l
Shallow Wells[a]							
GOP-02	ND/ND	ND/ND	22.7/13.9	630/ND	5.2/1.5	703/505	ND/ND
GOP-05	ND/ND	ND/ND	13.3/19.2	7,800/ND	ND/ND	13,200/12,600	39.3/30.1
GOP-07	ND/ND	ND/ND	27.8/17.2	3,320/ND	ND/ND	244/159	10.0/ND
GOP-23	ND/ND	ND/ND	10.1/11.6	1,390/ND	2.5/ND	1,740/1,500	12.3/ND
GOP-24	ND/ND	ND/ND	13.9/14.9	1,380/ND	2.8/1.3	676/552	9.0/8.7
Deep Wells[a]							
GOP-01	53.0/25.1	ND/ND	20.4/28.2	13,600/4,060	4.8/2.1	846/795	ND/ND
GOP-04	31.0	ND/ND	17.2/7.2	38,750/654	13.9/1.2	1,435/548	16.4/ND
GOP-06	ND/ND	ND/ND	11.3/8.4	1,350/ND	5.4/1.0	475/361	10.9/8.5
Offsite Well							
Alice Warren Well	4.3/ND	ND/ND	8.8/8.1	13,900/6,540	27.5/1.1	426/403	ND/ND
Standards							
MCL	50	10	50	--	50	--	--
Secondary MCL	--	--	--	300	--	50	--
AWQC TOX	--	10	179,000	--	50	--	15.4

[a]Shallow wells are approximately 25 feet deep. Deep wells are approximately 50 feet deep.

Notes: Results for contaminants are presented for unfiltered (total) and filtered (dissolved) concentrations (unfiltered/filtered). For duplicate sampling stations, average concentrations are presented. Samples were collected from November 26 to 28, 1987.

ND = Not Detected.
MCL = Maximum Contaminant Level as defined by the Safe Drinking Water Act (SDWA).
Secondary MCL = Recommended maximum contaminant level as defined by the SWDA.
AWQC TOX = Ambient Water Quality Criteria Toxicity Protection adjusted for drinking water as defined by the Clean Water Act.
-- = No standard report.

APPENDIX B

Table 2
GROUNDWATER DATA SUMMARY

Compound	Shallow Wells/Total Metals			Shallow Wells/Dissolved Metals			Deep Wells/Total Metals			Deep Wells/Dissolved Metals		
	Background (µg/l)	Reported Maximum (µg/l)	Average (µg/l)	Background (µg/l)	Reported Maximum (µg/l)	Average (µg/l)	Background (µg/l)	Reported Maximum (µg/l)	Average (µg/l)	Background (µg/l)	Reported Maximum (µg/l)	Average (µg/l)
Aluminum	19,300	155,000	16,012	U	2,550	364.9	226,000	111,000	16,116	U	14,100	2,357
Antimony	108	U	U	U	U	U	83	62	7	U	U	U
Arsenic	J88	30	5	J3.2	U	U	135	56	19	20	55.4	32.76
Barium	2,320	4,180	626.1	J119	309	309	3,430	1,960	389	J319	420	308
Beryllium	12	9.3	0.58	U	U	U	12	5.6	0.43	U	U	U
Cadmium	6.2	14	1.2	U	U	U	89	60	5.7	U	U	U
Calcium	570,000	681,000	138,405	422,000	663,000	273,364	131,000	202,000	74,237	J70,800	19,700	92,233
Chromium	260	203	27	U	14.9	4.04	328	165	22	U	28.2	6.8
Cobalt	130	119	13.95	5.9	U	U	120	126	11.45	U	U	U
Copper	415	342	43	U	U	U	411	307	41.33	U	U	U
Iron	332,000	256,000	38,010	J4.9	3,420	1,303	297,000	230,000	47,806	J207	106,000	7,128
Lead	172	134	18.8	U	10.2	1.46	470	437	45.6	U	9.2	1.53
Magnesium	336,000	266,000	50,259	224,000	234,000	103,702	63,900	95,000	30,520	465	96,000	28,931
Mercury	1.5	0.73	0.083	U	U	U	U	0.28	0.035	U	0.9	0.1
Manganese	9,000	14,400	2,352	2,110	23,000	4,345	6,020	3,580	901	J24,300	937	633.6
Nickel	448	363	56.7	U	U	U	372	304	46.2	U	U	U
Potassium	31,000	23,900	4,910	4,950	U	U	19,300	14,900	4,410	J2,030	J3,230	J2,048
Selenium	U	6.6	0.083	U	U	U	56	38	5.4	U	U	U
Silver	U	0.0088	0.0013	U	U	U	U	0.07	0.0085	U	U	U
Sodium	28,200	176,000	39,093	29,500	172,000	91,318	22,000	138,000	28,166	J21,000	138,000	35,100
Thallium	U	U	U	U	U	U	U	U	U	U	U	U
Vanadium	467	391	64.7	J6.3	U	U	464	301	40.45	U	U	U
Zinc	1,240	895	113	78.1	297	85.8	22	785	103	22	37.4	17.59

Notes: U=Analyzed but undetected.
J=Estimated concentration.

APPENDIX C

administrative Record Index
not included

APPENDIX D

15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

SEP 26 1988

Mr. Paul Means
Director
Arkansas Department of Pollution Control
and Ecology
8001 National Drive
Little Rock, Arkansas 72219

Dear Mr. Means:

The purpose of this letter is to summarize agreements we reached at our September 23, 1988, meeting regarding the Gurley Oil Pit Superfund site. You indicated that the Arkansas Department of Pollution Control and Ecology (ADPC&E) would support the Environmental Protection Agency's (EPA) proposal that no remediation of groundwater is necessary, if the Record of Decision clarifies:

1. that this decision is based on the premise that source contaminants are permanently isolated or removed from the environment rather than a specific source control technology, and;

2. that O & M costs would be established by the O & M plan to be developed by EPA and ADPC&E at a later date.

In addition, we discussed the State's concerns regarding the source control remedy (a RCRA vault) selected in EPA's October 6, 1986 Enforcement Decision Document. We agreed that a joint, in house, assessment of other potential source control remedies would be completed by November 15, 1988. This assessment would include such factors as cost, implementability, and whether the alternatives would need to comply with SARA or CERCLA. Based on this study, the viability of constructing a vault using 90% Federal and 10& State funds will be determined.

If I have misconstrued or omitted any significant points, please let me know as soon as possible. Otherwise, we will proceed to sign the Record of Decision for groundwater at Gurley and work with Mike Bates to frame the in house study parameters.

Sincerely yours,

Carl E. Edlund, Chief
Superfund Program Branch

cc: Mike Bates